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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,333	08/31/2006	Steven Porter Hotelling	PU040287	9243
<div>24498      7590      01/18/2008</div> <div>THOMSON LICENSING LLC</div> <div>Two Independence Way</div> <div>Suite 200</div> <div>PRINCETON, NJ 08540</div>				
			<div>EXAMINER</div> <div>CHAPMAN JR, JOHN E</div>	
			<div>ART UNIT</div> <div>2856</div>	<div>PAPER NUMBER</div>
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/591,333	<b>Applicant(s)</b> HOTELLING ET AL.	
	<b>Examiner</b> John E. Chapman	<b>Art Unit</b> 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____                                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____   | 6) <input type="checkbox"/> Other: ____                           |

### DETAILED ACTION

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 5 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites a desired result without providing any structure for achieving the desired result. A means for periodically coupling the driver to one vibratory mass and the sense circuits to the same vibratory mass during times when the driver is not coupled, should be recited in the claim.

Regarding claim 12, there is insufficient antecedent basis for the counter-phase motion and the sensed motion to have resonances, i.e., no resonant structure for either the counter-phase motion or the sensed motion is positively recited in claim 1. Nor is there any antecedent basis for "other resonant modes" in line 3.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1, 2, 4, 6, 14, 15, 17 and 19 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Pacey et al. (3,744,322).

Pacey et al. discloses a vibratory rotational rate sensor comprising a pair of vibratory masses (15, 17), a driver a driver (11, 12, 13, 14) for inducing periodic motion in the vibratory masses along an common axis, a first sense circuit (19, 21, 23, 25) for sensing motion in one direction orthogonal to the vibratory axis, and a second sense circuit (27, 29, 31, 33) for sensing motion in another direction orthogonal to the vibratory axis.

Regarding claims 2 and 15, the vibratory masses are driven in counter-phase motion (col. 4, lines 24-31).

Regarding claims 4 and 17, the driver (11, 12) is coupled to one vibratory mass (15), and the sense circuits (23, 25, 31, 33) are coupled to the other vibratory mass (17).

Regarding claims 6 and 19, the two sense axes are orthogonal to each other.

5. Claims 1, 2, 6, 14, 15 and 19 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Peters (4,512,192).

Peters discloses a vibratory rotational rate sensor comprising a pair of vibratory masses (10, 12), a driver a driver (28) for inducing periodic motion in the vibratory masses along an common axis (X), a first sense circuit (12) for sensing motion in one direction (Y) orthogonal to the vibratory axis, and a second sense circuit (10) for sensing motion in another direction (Z) orthogonal to the vibratory axis.

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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3, 7, 12, 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters.

Regarding claims 3 and 16, Peters discloses electromagnetic elements (28, 32) for driving the vibratory masses. The only difference between the claimed invention and the prior art consists in providing electromagnetic elements for sensing the acceleration of the vibratory elements. Electromagnetic accelerometers are well known in the art, and merely to use an electromagnetic accelerometer for the accelerometer (10, 12) of Peters would have been obvious to one of ordinary skill in the art for the purpose of measuring Coriolis force.

Regarding claims 7 and 20, the only difference between the claimed invention and the prior art consists in sensing motion of the vibratory masses (10, 12) along the vibratory axis and using the sensed motion to drive the vibratory masses, i.e., in providing a closed loop feedback control for the vibratory masses, which feature is well known in the art.

Regarding claim 12, the tuning fork (20) vibrates at resonance (column 3, lines 64-67). It is well known in the art and would have been obvious to provide the accelerometers (10, 12) with the same resonant frequency as the natural frequency of the tuning fork (20) in order to magnify the sense mode motion.

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8. Claims 8-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters as applied to claim 1 above, and further in view of Lutz (5,604,312).

Regarding claims 8 and 19, Peters discloses a planar restoring element (20) comprising a resilient first member 20a coupled to one mass (12) and a resilient second member (20b) coupled to the other mass (10). The only difference between the claimed invention and the prior art consist in providing a plurality of members (20a, 20b) coupled to the masses. Lutz discloses a vibratory rotational rate sensor comprising a planar restoring element having resilient members (13) connected to each of the masses (1). Merely to provide a plurality of members (20a, 20b) for the purpose of supporting the masses (10, 12) would have been obvious for the purpose of improved stability of the vibrating masses.

Regarding claim 11, Lutz provides resilient mounting members (14) for the restoring element (13) in order to assist antiphase oscillation.

Regarding claim 13, the planar restoring element (13) of Lutz is radially 3-fold symmetric, namely, radially symmetric about the X, Y and Z axes.

9. Claims 5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Pacey et al. or Peters as applied to claim 1 above, and further in view of Varnham et al. (5,226,321).

Regarding claims 5 and 18, the only difference between the claimed invention and the prior art consists in intermittently driving and sensing motion of a vibratory mass. Varnham et al. teaches driving in bursts and monitoring in the periods between drive bursts in order to avoid crosstalk problems between primary axes excitation and secondary axes detection. It would have


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been obvious to one of ordinary skill in the art to intermittently drive and sense motion of the vibratory mass of either Pacey et al. or Peters in order to avoid crosstalk problems between primary axes excitation and secondary axes detection.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Burdess (5,490,420) discloses an angular velocity sensor for sensing angular velocities about two axes (X and Y) in Fig. 7. Moriya et al. (5,895,852) discloses an angular velocity sensor for sensing angular velocities about two axes (X and Y).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John E. Chapman whose telephone number is (571) 272-2191. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
JOHN E. CHAPMAN  
PRIMARY EXAMINER